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March 22, 2022

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Via U.S. Regular Mail and Email: *CHALLORA@idem.IN.gov*

Christina Halloran
Indiana Department of Environmental Management
Enforcement Section
100 N. Senate Avenue
Indianapolis, Indiana 46204

Re: Indiana Department of Environmental Management ("IDEM")
Case No. 2019-26271-H Proposed Agreed Order

Dear Ms. Halloran:

We represent Heritage Environmental Services, LLC ("Heritage") in the above referenced Case Number. We understand IDEM is asking Heritage to sign a proposed Agreed Order in this matter to resolve certain Notices of Violation related to Heritage's Subtitle Class C Hazardous Waste Landfill located in Roachdale, Putnam County Indiana. This proposed Agreed Order signed by Jennifer Reno, Chief of IDEM Land Enforcement Section, Compliance Branch, Office of Land Quality dated December 20, 2021 replaces a draft agreed order previously proposed by IDEM signed by Linda McClure, Chief of IDEM Land Enforcement Section, Office of Land Quality dated September 26, 2019. References in this correspondence and in any attachments to the "proposed Agreed Order" refer to the 2021 proposed Agreed Order unless otherwise specified.

Based on our review of the proposed Agreed Order and the controlling legal standards, Heritage is requesting revisions to the proposed Agreed Order. Please see "Exhibit A" to this correspondence for our proposed revisions and briefing that details the basis for the requested revisions.

I look forward to working with you to bring this matter to a conclusion.

Yours sincerely

Janessa M. Glenn
Counsel

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MAR 30, 2022
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Exhibit A

Heritage Environmental Response to IDEM Proposed Agreed Order

Qualified offer of settlement
Inadmissible pursuant to Rule 408 of the Indiana Rules of Evidence.

Proposed Revisions to FOF 7.a.

Pursuant to Permit Condition 11.C and Attachment C 3.2, wastestream confirmation analysis is conducted at a given interval, as described in Table C-3 of the RCRA Subtitle C permit. The purpose of the wastestream confirmation analysis is an ongoing determination that the wastestream is consistent and meets Land Disposal Restriction ("LDR") regulations or the requirements of 40 CFR Part 264.555(e)(iv) or (v) which are referenced in 40 CFR 264.555.

As noted during the record reviews and inspections, Respondent accepted ~~has been accepting~~ hazardous waste debris from Rineco, a RCRA permitted treatment facility located in Benton, Arkansas, for a certain one to two (1-2) year period of time ~~the past 1-2 years~~ without conducting Wastestream Confirmation Sampling and Analysis monthly as described by Table C-3 in Respondent's prior RCRA permit. However, the Respondent believes the hazardous waste debris as received was both consistent as required by 40 CFR 264.13 and 268.7 and was appropriate for land disposal. Because the hazardous waste debris is contained in macroencapsulation bags and therefore already meets or complies with the applicable LDR standard, Respondent was unable to conduct sampling , ~~According to Respondent, they cannot conduct the required monthly sampling because the hazardous waste debris is in a microencapsulation bag~~ IDEM granted Respondent's Class 2 Permit Modification request on July 15, 2020. Respondent's current RCRA Subtitle C permit, Attachment C, no longer requires Wastestream Confirmation Sampling and Analysis of the hazardous waste debris.

Proposed Revisions to FOF 7.b.

Pursuant to 40 CFR 268. 7(c)(2), the owner or operator of any land disposal facility disposing any waste subject to restrictions under this part must assure that the wastes or treatment residues are in compliance with the applicable treatment standards set forth in subpart D of this part. Such testing must be performed according to the frequency specified in the facility's waste analysis plan as required by §264.13 of this chapter.

As noted during the record reviews and inspections, Respondent ~~has been~~ accept~~ing~~ed hazardous waste debris from Rineco, a RCRA permitted treatment facility located in Benton, Arkansas, for a certain 1-2 year period of time ~~that past 1-2 years,~~ at an approximate rate of 20-30 bags per week without conducting Wastestream Confirmation Sampling and Analysis monthly as described by Table C-3 in Respondent's prior RCRA permit. However, the Respondent believes the hazardous waste debris was both "consistent" as required by 40 CFR 264.13 and 268.7 and was appropriate for land disposal. ~~According to Respondent,~~ Because the hazardous waste debris is contained in macroencapsulation bags, and thus Respondent was

unable to ~~they cannot~~ conduct ~~the required monthly~~ sampling, IDEM granted Respondent's Class 2 Permit Modification request on July 15, 2020. Respondent's current RCRA Subtitle C permit, Attachment C, no longer includes Wastestream Confirmation. Sampling and Analysis of the hazardous waste debris. ~~because the hazardous waste debris is contained in a microencapsulation bag.~~

Legal Basis for Proposed Revisions to FOF 7.a and 7.b

Heritage Environmental is proposing revisions to Finding of Fact 7.a. and 7.b. in the proposed Agreed Order to reflect the Class 2 Modification that revised Attachment C to the RCRA Subtitle C Permit such that a monthly Wastestream Confirmation Sampling and Analysis is no longer required. This requested revision will more accurately and fairly reflect: (1) the current parameters of the Permit, and (2) that there is no ongoing violation. IDEM will recall that based on the meeting between representatives of Heritage Environmental and IDEM held January 7, 2020, IDEM was to amend all relevant orders related to the complying with the original WAP, and Heritage Environmental was to submit a WAP modification to clarify the WAP language in question. After some time, Heritage Environmental submitted a request to modify its WAP even without IDEM modification of the relevant orders. This modification request was granted by IDEM.

Further, as acknowledged by IDEM, the purpose of the wastestream confirmation analysis is to ensure the wastestream is both consistent and meets LDR. These dual purposes were met at all times that Heritage Environmental accepted the macroencapsulated bags, both prior to and following the modification to Heritage Environmental's RCRA Subtitle C Permit. Accordingly, the prior Attachment C Waste Analysis Plan ("WAP") was inconsistent with the appropriate standards for the macroencapsulated waste.

1. The Waste Stream is Consistent

In accordance with the Heritage Environmental Waste Analysis Plan found in its Subtitle C permit, and as required by federal environmental regulations (40 CFR 264.13 and 268.7), an annual evaluation of all active wastestreams approved for disposal into a Heritage Environmental facility must be performed. The purpose of this evaluation is to determine if any physical or chemical changes have occurred in the generating process for each wastestream during the past year.

For the debris at issue, the generator first provided certification of the waste on 3/28/2017, and then provided Heritage Environmental annual confirmation of the waste consistency in the form of annual recertification. These recertifications show there has been no change in process that could affect the physical or chemical composition of the wastestream.

Recertification was provided on:

7/26/2017; 3/14/2018; 1/31/2019; 12/17/2019; 5/24/2021.

2. The Waste Stream Meets LDR

The wastestream meets LDR as a result of having been Macroencapsulated. This is a technology meeting a narrative performance standard, not a concentration or numerical standard. As acknowledged by

IDEM in the Heritage Environmental RCRA Class 2 Permit modification process, sample collection and analysis are not appropriate for a technology standard, nor can it be performed on a macroencapsulated wastestream. The appropriate "analysis" is inspecting the resulting macroencapsulation to determine that it meets the specified standard. This is completed by Heritage Environmental for each shipment by the facility on arrival prior to unloading, as well as the generator prior to shipping. Additional analysis concerning the wastestream meeting the LDR standards are found in the discussions related to Proposed Revisions to FOF 7.c.

Proposed Revisions to FOF 7.c

~~Pursuant to Permit Condition II.C and Attachment C 3.2, if the load does not meet LDR requirements or the requirements for Corrective Action Management Unit ("CAMU") eligible waste described in Exhibit C-7, the load will be re-sampled. The waste shipment that does not meet LDR requirements will be considered for treatment at Heritage's Indianapolis Facility.~~

As noted during record reviews and inspections, there was a fire after unloading one macroencapsulated bag of ~~the~~ hazardous waste debris accepted from Rineco on February 18, 2019~~, did not meet LDR treatment standards. This was evidenced by the fact that the hazardous waste debris contained in a microencapsulation bag ignited and caught fire. The hazardous waste debris was not re-sampled or brought to Heritage's Indianapolis facility for further treatment.~~ The hazardous waste debris was placed in eight (8)-26 yard bags ~~treated~~. Dry ice and boric acid were added in the bags to limit oxygen exposure in accordance with an immediate response action as provided in 40 CFR 264.1(g)(8), and the bags were placed into the landfill.

Legal Basis for Proposed Revisions to FOF 7.c.

Heritage Environmental requests Finding of Fact 7.c. be revised to reflect the regulatory standards applicable to the response actions taken.

The applicable regulatory requirements for the treatment of hazardous wastes found in 40 CFR Chapter 264 do not apply to immediate containment actions by facilities lacking the requisite permit to undertake such actions. 40 CFR 264.1(g)(8):

> (g) The requirements of this part do not apply to:
>
> (8) (i) Except as provided in paragraph (g)(8)(ii) of this section, a person engaged in treatment or containment activities during immediate response to any of the following situations:
>
> (A) A discharge of a hazardous waste;
>
> (B) An imminent and substantial threat of a discharge of hazardous waste;
>
> (C) A discharge of a material which, when discharged, becomes a hazardous waste.
>
> (D) An immediate threat to human health, public safety, property, or the environment, from the known or suspected presence of military munitions, other explosive material, or an explosive

device, as determined by an explosive or munitions emergency response specialist as defined in 40 CFR 260.10.

(ii) An owner or operator of a facility otherwise regulated by this part must comply with all applicable requirements of subparts C and D. *[Preparedness and Prevention and Contingency Plan and Emergency Procedures].*

When EPA promulgated this regulation, it noted that "treatment" of hazardous waste generally must be carried out by facilities with either a RCRA permit or an interim status permit to do so. But, in an immediate response situation, a facility without a RCRA treatment permit may have to undertake a containment action, including owners/operators of disposal facilities that do not hold a permit to treat hazardous waste. EPA notes: "[t]his amendment is designed to allow appropriate responses to spills of hazardous wastes without being limited by the treatment and storage standards and the permit and interim status requirements of the regulations." (45 Fed. Reg. 766260, 1980). As such, the regulations "exempt immediate containment and treatment activities from the Part 264 and 265 regulations governing treatment and storage...". EPA provides this analogous example, albeit of an "interim status" facility:

> "A spill occurs on the site of disposal facility which is in interim status. The operator of the facility undertakes immediate containment and clean up. He subsequently disposes of the waste at his facility. The immediate containment and clean-up activities are exempted from the requirements of Part 264 and storage and treatment. The owners and operators of the facility must, however, carry out the provisions of the contingency plan under § 265.51 and follow the emergency procedures § 265.56. The disposal al the hazardous waste is subject to the disposal requirements of Part 265. If the disposal facility is unable to dispose of the spill residue, the owner or operator of the facility, if he has generated a hazardous waste, may accumulate the waste onsite under the provisions of § 262.34, and must comply with all the Part 262 requirements applicable to generators of hazardous waste.

Id. Thus, when Heritage Environmental placed inerting agents out of an abundance of care during the final phase response actions, that activity was exempt from permitting. This response was required to comply with the Heritage Environmental Contingency Plan and Emergency Response Procedures of its RCRA permit, which Heritage Environmental followed.

As IDEM is well aware, the incident on February 18, 2019, was an isolated event that had not occurred in any of the hundreds of prior shipments of this material from Rineco and has not occurred since. This was clearly an immediate response, not treatment of a hazardous waste.

As written, the Agreed Order does not accurately characterize the activities undertaken at the facility on February 18, 2019. The proposed revisions are intended to correct the mischaracterization.

2. The material was not "ignitable" and thus did not violate LDR requirements.

The term "ignitable" is a specifically defined regulatory term. It does not mean anything that might possibly smolder or otherwise catch fire. EPA has specifically and carefully defined when a waste is

"ignitable" so as to limit the universe of materials that would be considered "ignitable" for waste management purposes.

"Ignitable" is defined as:

> "A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties... It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes **and**, when ignited, burns so vigorously and persistently that it creates a hazard."

40 C.F.R. § 261.21(a)(2) (emphasis added).

IDEM and Heritage Environmental agree that there was a fire immediately following the unloading, but no one has suggested that it burned *so vigorously and persistently to create a hazard*. Thus, by the plain language of the definition, to merely kindle is insufficient to establish ignitability.

EPA has not adopted a required testing method to determine if a waste passes or fails the characteristic of ignitability under RCRA's regulatory definition. While SW-846 Method 1030 can be useful, it is not required by federal regulations to determine if a waste is ignitable. In its guidance, EPA expressly states: "...the test results of this method cannot be used to directly classify a waste as a D001 hazardous waste, nor can the results be used by themselves to definitively classify a waste as non-hazardous. No specific test for ignitable solids is required by the RCRA regulations, and *only a waste meeting the narrative regulatory definition at 40 CFR 261.21(a)(2) is an ignitable hazardous waste because it is an ignitable solid.*" ENVT'L PROTECTION AGENCY, SW-846 TEST METHOD 1030: IGNITABILITY OF SOLIDS § 1.2 (Rev. 2014). Even EPA's rules note that ignitability in solid waste may be determined when it is "[r]easonably detected by generators of solid waste through their knowledge of their waste." 40 C.F.R. § 261.10(a)(2)(ii). This can be contrasted with the testing methods for free liquids drained from an ignitable solid. The EPA method for testing characteristics of an ignitable liquid ASTM Method D-93 by testing for Flash Point by Pensky-Martens Tester, which must be employed by generators. https://rcrapublic.epa.gov/files/14669.pdf

In EPA RO 14405, the agency addressed disposal of acetone wipes. There EPA explained that a local fire department's description of materials as "flammable" does not mean those materials are "ignitable" under the regulatory definition. In doing so, EPA noted that "hazardous waste definitions correspond strictly to Federal and state definitions." https://rcrapublic.epa.gov/files/14405.pdf

EPA recognizes that "ignitability" of debris requires a special analysis. In a rulemaking addressing dilution as a treatment standard, EPA noted: "(almost no debris could be ignitable, given that most ignitable wastes must be liquids...". 57 Fed. Reg. 37236 (August 18, 1992).

IDEM's interpretation of what is "ignitable" is consistent with the EPA approach, as noted in IDEM's Guidance document dated February 5, 2015 "Ignitable Solid Hazardous Waste."

In summary, the following questions should be asked when making an ignitable solid hazardous waste determination:
1. Based on knowledge of the waste, is the solid capable of causing fire through friction, absorption of moisture or spontaneous chemical changes under normal temperatures and pressures encountered in management of the waste?
2. If the answer is yes to the above question, does a representative sample of the waste test positive for SW-846 Method 1030, Ignitability of Solids? If yes, the waste is an ignitable solid hazardous waste (D001).

The proposed revisions delete reference to the waste not meeting LDR standards because it caught fire, since that is not the controlling regulatory standard.

Proposed Revisions to FOF 7.d.

Pursuant to prior Permit Condition II.C and Attachment C 3.3, all fingerprint screening, (pH, Paint Filter Liquids Test and Appearance) and load verification procedures will be conducted at the Heritage Environmental Landfill. Results will be compared to the baseline analysis established by Wastestream characterization Analysis, as explained in Section 3.1. Acceptable ranges are outlined in Exhibit C-3, the Load Verification Plan and Table C-4 in Exhibit C-1.

As noted during the inspections, Respondent did not conduct the pH or Paint Filter Liquids Test for the macroencapsulated wastes received from Rineco and disposed on Site. For debris contained in macroencapsulation bags, Respondent was unable to conduct fingerprint screening; thus, IDEM granted Respondent's Class 2 Permit Modification request on July 15, 2020. Respondent's current RCRA Subtitle C permit, Attachment C, no longer requires fingerprint screening of the hazardous waste debris. Appearance screening is limited to confirming that the truck contains a macroencapsulation bag. Respondent hasd been receiving this waste for 1-2 years, at an approximate 20-30 bags per week prior to the Permit Modification.

Legal Basis for Proposed Revisions to FOF 7.d.

Please see discussion for changes to 7.a and 7.b. This requested revision will more accurately and fairly reflect: (1) the current parameters of the Permit, and (2) that there is no ongoing violation.

Proposed Revisions to FOF 7.e.

~~Pursuant to Permit Condition II.C. and Permit Condition IV.G.I. & G.2., the Permittee must not place bulk or non-containerized liquid wastes or wastes containing free liquids in the landfill and the Permittee must demonstrate the absence of free liquids in either a containerized or a bulk waste by the following test: "Method 9095 (Paint Filter Liquids Test)" as described in "Test methods for Evaluating Solid Wastes, Physical/Chemical methods" (EPA Publication No. SW 846).~~

As noted during the April 26, 2019, inspection, IDEM took a video of the unloading process of the hazardous waste debris from Rineco. The video shows a de minimis amount of free liquids ~~escaping~~ dripping prior to the bag exiting the trailer. Respondent contends that the trailer is the container, and

that the macroencapsulation bag is a treatment standard and does not meet the definition of a container.

Legal Basis for Revisions to FOF 7.e.

Hazardous debris delivered to the facility is certified by the generator as treated to meet LDR using macroencapsulation to comply with the alternative treatment technology specified on Table 1 of 40 CFR Part 268.45. On arrival, the facility inspects the macroencapsulated loads to confirm it visually meets the alternative treatment technology.

The load in question was inspected by at the facility's sample gantry by Heritage Environmental along with the three IDEM inspectors. Heritage personnel did not visually observe free-liquid or standing liquid in the trailer (container) or on the load (macroencapsulated bagged waste). At the time of their visual inspection, the IDEM inspectors made no mention of observing free-liquid or standing liquid. As stated by the IDEM, the observation was not made until the instant before the bag exited the trailer. The IDEM's video shows that the liquid was a de minimis amount.

The process Heritage employs is consistent with EPA's WAP Guidance Manual EPA 530-R-12-001:

> Special Requirements for Bulk and Containerized Liquids in Landfills
>
> A WAP should identify the procedures to ensure that these requirements are met, and if applicable, describe the procedures that will be used to determine whether a biodegradable sorbent has been added to the waste in the container.
>
> The WAP may need to include a requirement for free liquids in containers or, if free liquids are not otherwise expected to be present in a container, then visual inspection. If the visual inspection detects free liquids, appropriate steps may be required (e.g., performance of free liquid test, elimination of free liquids, etc.).

WAP Guidance Manual EPA 530-R-12-001 (emphasis added). Pursuant to the regulatory definition, the trailer was the "container" in this instance:

> Container means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

40 CFR 260.10.

This is further supported by EPA Training Module EPA530-K-05-010:

> A container is any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled (§260.10). This definition is intentionally broad to encompass all the different types of portable devices that may be used to handle hazardous waste. For example, a container may be a 55-gallon drum made from steel or plastic, a large tanker truck, a railroad car, a small bucket, or a test tube.

It is also supported by related regulatory history:

> The Agency considered the argument made by several commenters that asbestos-contaminated hazardous debris and hazardous debris contaminated with asbestos should be managed according to existing EPA and OSHA regulations (i.e., bagging) and placing bagged material in subtitle C facility. The Agency agrees with the commenters that, if bagging meets the performance standard for macroencapsulation, such debris may then be disposed of in a subtitle C facility.

57 Fed. Reg. 37238 (August 18, 1992).

Perhaps most importantly, this is consistent with the current Heritage Environmental WAP. Here, liquids were drained from the debris materials at the Rineco facilities before the solids were macroencapsulated and certainly before the bags reached the Heritage Environmental facility. There was a de minimis amount of liquid noted in a video taken of the unloading process, possibly just condensation. Pursuant to the WAP, the facility was free to "spot" solidify the liquid *in the container (i.e., trailer)* (emphasis added). The WAP specifically refers to the trailer as the "container" which is wholly consistent with Heritage Environmental's position that the trailer is, in fact, the container. Further, no sampling was necessary. As noted in the current WAP: "[w]astes not amenable to sampling will be inspected for observable free liquid (i.e., observable prior to unloading). Free liquids visually observed (e.g., condensate or stormwater accumulated between the truck bed and liner) during unloading will be solidified with soil."

Proposed Revisions to Order No. 3

~~Upon the Effective Date, Respondent shall comply with Permit Condition II.C and Attachment C 3 .2 by providing certification that hazardous debris treated by microencapsulation meets the debris treatment technology described in Table 1 of 40 CFR 268.45. Specifically, Respondent shall submit to IDEM within thirty (30) days certification that the hazardous waste debris that caught fire treated by microencapsulation received from Rineco on February 18, 2019 on Uniform Hazardous Waste Manifest 000928540WAS met LDR's.~~

Legal Basis For Proposed Revisions to Order No. 3.

The EPA regulations for LDR certifications do not apply to Heritage Environmental, and Heritage Environmental's RCRA Subtitle C Permit does not provide for such certifications. Rineco, as the generator of this waste, provided certifications consistent with regulatory requirements.

Notification, record keeping, and certification requirements for generators, treaters, and disposal facilities for materials to be land disposed are found at 40 CFR 268.7. While generators/treaters have extensive requirements to certify the treatment of materials appropriately detailed in Part 268, disposal facilities have far fewer requirements:

(c) Except where the owner or operator is disposing of any waste that is a recyclable material used in a manner constituting disposal pursuant to 40 CFR 266.20(b), the owner or operator of any land disposal facility disposing any waste subject to restrictions under this part must:

(1) Have copies of the notice and certifications specified in paragraph (a) or (b) of this section [the certifications required by the generator/treater.]

40 CFR 268.7(c).

Heritage Environmental has no regulatory duty to certify landfill materials comply with LDR requirements. That was the duty of the generator/treater.

Notably EPA has clarified that "it is the generator's responsibility to make sure their waste is not hazardous for the characteristic of ignitability." *See*, U.S. Envt'l Protection Agency, 9443.1995(02), The Difference between the Definition for the Characteristic of Ignitability as it Pertains to Solids vs. Liquids (1995). In EPA RO 14405, the agency addressed disposal of acetone wipes, and stated that it is the *generator* that should determine ignitability as it is defined in the regulations through generator process knowledge, and that such opinion should not be gathered from a local fire department's description of the materials as "flammable." In doing so, EPA noted that "hazardous waste definitions correspond strictly to Federal and state definitions." https://rcrapublic.epa.gov/files/14405.pdf

Finally, Heritage Environmental's RCRA permit does not provide for such certification because the landfill facility is not authorized to treat materials for LDR (except as provided for immediate containment, as discussed above). Including a requirement that Heritage Environmental do so in the Agreed Order is asking Heritage Environmental to violate its RCRA Permit. Heritage Environmental took necessary steps to contain the single smoldering bag and then appropriately relied on Rineco' s certification that the materials were suitable to be landfilled.

Proposed Revisions to Order No. 4

~~If Respondent wishes to continue to treat or dispose of hazardous debris treated by microencapsulation bags, Respondent shall provide to IDEM documentation that a request to USEP A, pursuant to 40 CFR 268.42(b), for Determination of Equivalent Treatment (DET) has been made. Respondent shall obtain approval from USEPA in order to continue to accept waste treated by placement in microencapsulation bags for disposal of hazardous waste debris.~~

Legal Basis for Proposed Revisions to Order No. 4.

There is no legal or practical need for a Determination of Equivalent Treatment and/or approval to continue to accept the debris waste from Rineco via macroencapsulation.

1. Macroencapsulation is a regulatory approved treatment standard for land disposal of hazardous waste debris.

Macroencapsulation of hazardous waste debris material is already *specifically approved* as a treatment standard for land disposal through EPA regulations In 40 CFR Part 268. EPA recognizes that debris contaminated with hazardous waste is different from typical "process waste" from both a management and treatment perspective. Accordingly, the land disposal restrictions precisely define hazardous "debris" and regulatory establish alternative treatments that can be utilized to comply with land disposal restrictions.

Debris and Hazardous Debris are defined as:

> (g) Debris means solid material exceeding a 60 mm particle size that is intended for disposal and that is: A manufactured object; or plant or animal matter; or natural geologic material....
>
> (h) Hazardous debris means debris that contains a hazardous waste listed in subpart D of part 261 of this chapter, or that exhibits a characteristic of hazardous waste identified in subpart C of part 261 of this chapter....

40 CFR Part 268.2.

EPA then adopted alternative, technology-based treatment standards for such debris. Application of one of the prescribed technologies to hazardous waste debris is, by regulation, considered conforming to land disposal restrictions. Macroencapsulation of debris is a *specified technology for treatment of debris prior to land disposal.*

> (a) Treatment standards. Hazardous debris must be treated prior to land disposal as follows unless EPA determines under § 261.3(f)(2) of this chapter that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard provided in this subpart for the waste contaminating the debris:
>
> (1) General. Hazardous debris must be treated for each "contaminant subject to treatment" defined by paragraph (b) of this section using the technology or technologies identified in Table 1 of this section.

Table 1—Alternative Treatment Standards For Hazardous Debris

Technology description	Performance and/or design and operating standard	Contaminant restrictions
C. Immobilization Technologies		
1. Macroencapsulation: Application of surface coating materials such as polymeric organics	Encapsulating material must completely encapsulate debris and be resistant to degradation by the debris	None

(e.g., resins and plastics) or use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media	and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes)	

40 CFR Part 268.45. EPA described this macroencapsulation immobilization technology when it adopted the applicable rules:

> Macroencapsulation is the application of surface coating materials such as polymeric organics (e.g., resins and plastics) or the use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media. The treatment standard requires that the encapsulating material must completely encapsulate the debris (i.e., the encapsulant must completely surround the debris and be unbroken). Further, the encapsulating material must be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes) to ensure that the likelihood of migration of toxic contaminants has been substantially reduced.
>
> ...
>
> Although debris may contain several contaminants subject to treatment, the treatment standards generally do not require treatment by multiple technologies (i.e., a treatment train). This is because many of the specified technologies effectively treat various types of contaminants (e.g., metals, aromatic and aliphatic organic compounds, halogenated and nonhalogenated organic compounds).
>
> ...
>
> Generators (and owners and operators of treatment facilities) may select any treatment technology that is not restricted for the contaminant subjected to treatment.
> ...
>
> Today's rule establishes only general, nonobjective performance standards for these technologies rather than the more prescriptive standards that were proposed (57 FR 1035-1036) because, based on public comment and the Agency's re-evaluation, the Agency is concerned that the proposed prescriptive standards may be overly restrictive (i.e., by requiring conditions that are more than necessary to ensure immobilization prior to subtitle C management) in some cases and ineffective in others.

57 Fed. Reg. 37225 (August 18, 1992).

In addition to the regulations themselves, EPA has noted on multiple occasions that macroencapsulation is an approved alternative method for treatment of debris. *See, e.g.* EPA530-R-01-007, "Land Disposal Restrictions: Summary of Requirements, Revised August, 2001."

2. The Rineco macroencapsulation process meets performance standards.

The hazardous waste debris managed by Rineco typically consists of rags, wipes, plastics, paper, cardboard, absorbent pads, glass, metal, filters, rubber trash, glass, personal protective equipment, wood, and similar materials. These materials undergo fingerprint testing in accordance with the Rineco's WAP. Provided the testing results meet the acceptability requirements of the Rineco permit, the debris material is authorized for further processing at the facility. This involves removal of the debris from the generators' containers and placement in shredders inerted with carbon dioxide, where unexpected free liquids are removed and the materials are appropriately sized for macroencapsulation, as outlined in 40 CFR Part 268.45. Prior to macroencapsulation, the debris is observed for a period of time to ensure there are no free liquids and is returned to ambient temperature (the process of shredding may frictionally heat the debris).

As part of operating practices, Rineco conducts testing of the debris using ASTM Standard Test Method D4982-12 – Flammability Potential Screening Analysis of Waste prior to shipment. The facility completes a Uniform Hazardous Waste Manifest and a Land Disposal Restriction Notification.

The macroencapsulation device itself consists of a sift proof, outer coated woven polypropylene durable outer shell, an 8-mil low density polyethylene liner system, and 16 oz. nonwoven polypropylene geotextile padding material to protect the liner system. The device is constructed with threaded seams of Denier thread. It is equipped with a zipper system to allow the placement of the debris, followed by closure to prevent exposure of the waste to leachate in the landfill. The 8-mil low density polyethylene liner completely encapsulates the debris placed within the device as the top, bottom, and four sides of the device are lined with the 8-mil low density polyethylene liner. The debris is placed inside the liner system and the entire device is zipped closed. The sift proof, outer coated woven polypropylene shell is a physical protection device for the liner system during the normal handling process for the device. The outer shell also prevents the 8-mil polyethylene liner from coming into direct contact with waste material that has been landfilled. The interior of the device is lined with a non-woven geotextile that prevents direct contact of the debris with the 8-mil liner and serves as padding (protective layering) that resists puncture or tearing of the device from the debris during the normal handling processes.

Collectively, these features meet the performance requirements for macroencapsulation of debris.

3. The macroencapsulation process is used by other Subtitle C landfills.

Reliance on a generator macroencapsulation process for treatment of hazardous waste debris for land disposal is certainly not unique to Heritage Environmental and is not even new in the Class C Landfill community.

Although not privy to the exact methods of landfills owned by others, Heritage Environmental believes that macroencapsulation is currently used at Subtitle C landfills located across the U.S., including in Arlington, Oregon, Kettleman City, California, Emelle, Alabama, and Sulpher, Louisiana. For example, the Debris Treatment Plan For Chemical Waste Management of the Northwest, Inc. Arlington Facility issued by the Oregon Department of Environmental Quality, ORD 089 452 353 17629 authorizes a high

density polyethylene (HDPE) resins for hazardous debris macroencapsulation. PdfHandler.ashx (state.or.us); LANDFILL DESIGN AND OPERATIONS PLAN (state.or.us).

Additionally, the WAPs for U.S. Ecology Idaho, Texas, and Michigan facilities contemplate landfilling debris that has been macroencapsulated, as does the Chemical Waste Management facility in Alabama.